Measuring chambers 8 mm

9803 509 50202
9803 509 51202/3
9890 000 016 . .

FILING INSTRUCTIONS

File this documentation in binder:

UNIT manual generator
UNIT manual Compact DIAGNOST 1

PHILIPS

Philips Medical Systems DMC GmbH

SERVICE MANUAL
742
UNIT

Measuring chambers 8 mm

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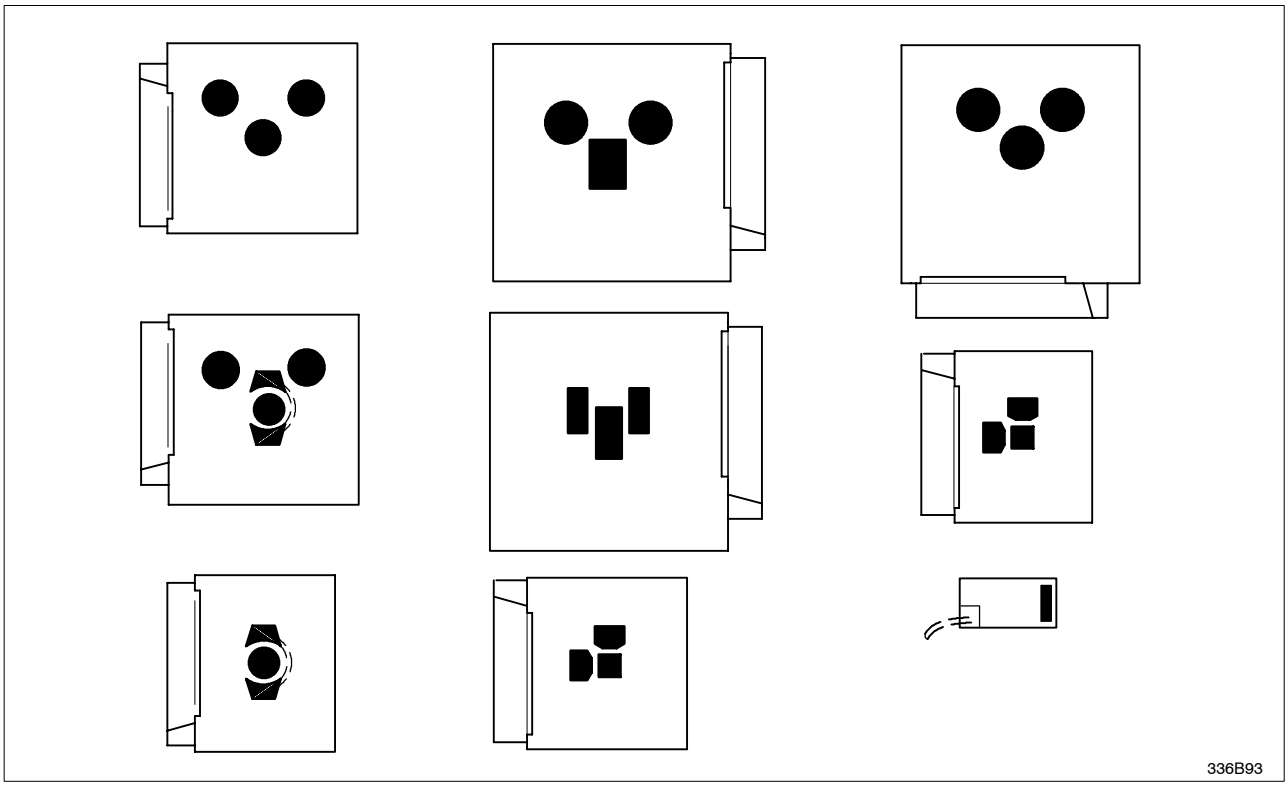
Measuring chamber cables

9803 507 0..02 / 9890 000 017..

Adapter AMPLIMAT cable, 3-plus connector to sub-D connection

9890 000 02331



Ionization measuring chambers 8 mm for connection to AMPLIMAT exposure controls

DMC Hamburg

SERVICE MANUAL - UNIT

Measuring chambers 8 mm
Measuring chamber cables
Adapter AMPLIMAT cable, 3-plus to sub-D connection

Author: G. Kramm

Type No: 9890 000 01611..4 / 9890 000 01621..3
Type No: 9890 000 01631..3 / 9890 000 01641..3
Type No: 9890 000 01651..3 / 9890 000 01661..3
Type No: 9890 000 01671..3 / 9890 000 01681..3
Type No: 9803 509 50202 / 9803 509 51202..3

Type No: 9803 509 0..02/9890 000 017..

Type No. 9890 000 02339

In case there are any questions concerning this manual,
please send this LOPAD via fax to 49/(0)40/5078 2481

File: measuring chambers 8mm_74223AB

List of pages and drawings (LOPAD)

Manual Order No: 4512 101 74223 REV AA
released: 05/2003

TEXT

DRAWINGS

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1. Ionization measuring chambers 8 mm

Ionization chambers are measuring elements for the automatic exposure control (Amplimat). For different versions refer to Z-2.

Z-1 shows a general schematic amplifier diagram. However, repair work is practically impossible.

2. Measuring chamber cables for 8 mm chambers and adapter AMPLIMAT cable

For the different connections between AMPLIMAT and measuring chamber refer to Z-5.

2.1. Measuring chamber cable for generators MCM / SCM / MEDIO CP/ SCP / Power Part OMCP

9803 507 0 . . 02

		length:
0	8	8 m
1	2	12 m
1	6	16 m
2	0	20 m
2	4	24 m
2	8	28 m

2.2. Measuring chamber cable for generator OPTIMUS

9890 000 017 . .

		length:
2	1	12 m
3	1	16 m
4	1	20 m
5	1	24 m

2.3. Adapter for chamber cable 9890 000 0233.

This adapter prepares the AMPLIMAT in OPTIMUS generators to older measuring chambers requiring +40 V to +45 V for operation.

This adapter also establishes connection between plugs Sub-D ——— 3 plus (3+).

For principle refer to Z-5.

3. Installation

The illustration on Z-2 shows the more sensitive position, provided the plan view is the radiation entry plane.

If the chamber is installed the other way round (entrance of radiation from behind), the sensitivity is reduced by about 18%.

3.1. Installation of 8 mm chambers in 16 mm frames (see Z-4)

- Install the ionization chamber electrically insulated.
  For Philips bucky trays use 4 spacing strips (code No. 4512 102 19901)
  or 4 spacing strips (code No. 4512 103 06021).

3.2. Connection of the 8 mm measuring chambers (see Z-3)

Caution!

With older measuring chambers only 1 earth conductor was needed.

Therefore connection

PH109 ——— Amplimat N

was not established and served as a reserve wire only. When more recent measuring chambers are installed this connection must be established for otherwise the field selection does not work.

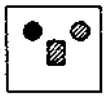
3.3. Sensitivity changeover of the junior DIAGNOST/extremity measuring chamber

For exposures with intensifying screen do not connect 101 PH; high sensitivity.

- For screenless films raise the capacity of the integrating capacitor by activating 101 PH (S2).

4. Checking the order of the measuring fields and checking them for proper operation

The measuring fields are activated as follows:

measuring chamber	button or automatic	field	connector 14 - pole amplimat	colour of cable	connector of measuring chamber	field No. of measuring chamber	dominant	
bucky		L	A	white/black	101	1		left-hand field
		M	D	red	102	2		medium field
		R	H	violet	103	3		right-hand field
scopomat	automatic	L	A	white/black	101	1		horse-shoe field
	automatic	M	D	red	102	2		medium field
	automatic	R	H	violet	103	3		lateral fields

to avoid wrong activation an exchange of leads A/H is necessary for SCOPOMATIC chambers in MAXIMUS CM, SUPER CM, MEDIO CM and SUPER CP generators: withe/black → H, violet → A.

201B93

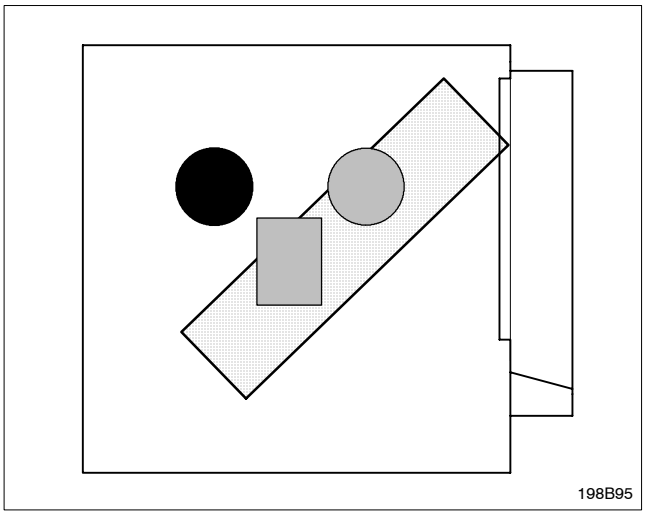
Check of functions

1...2 mm thick lead cover strip of 80 x 300 mm size required.

- Select exposure voltage 40 kV...60 kV.

4.1. 3-field measuring chambers

- Insert a large cassette.
- Select the left-hand measuring field.
- Cover the right-hand and medium measuring field.
- Switch an exposure.
  The Amplimat terminates the exposure.
- Switch off left-hand measuring field.
- Select the right-hand field.
- Switch an exposure.
- The exposure must show a noticeably longer switching time.
- If not, exchange the connections
  (101 PH and 103 PH) or A and H and repeat the check.
- Check the medium field in the same way.
- For operation of the pediatric Amplimat chamber bucky for children establish connection between A and H.



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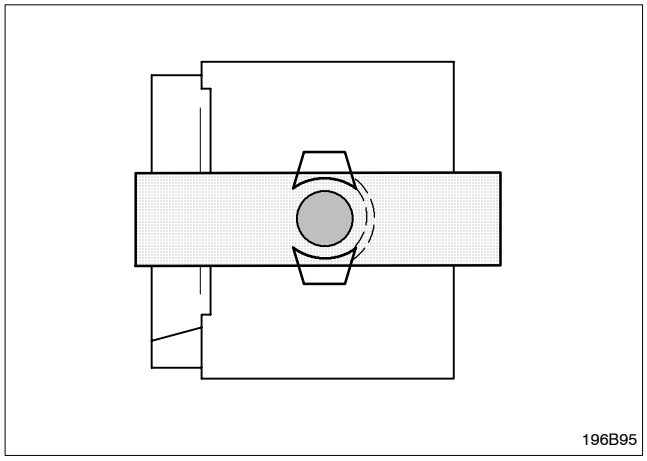
4.2. Measuring chambers for serial changers

4.2.1. Checking the medium field

- Insert a cassette.
- Switch an exposure with the stomach cone.
  The Amplimat terminates the exposure.
- Cover the medium field horizontally.
- Switch an exposure.
  The exposure is noticeably longer.



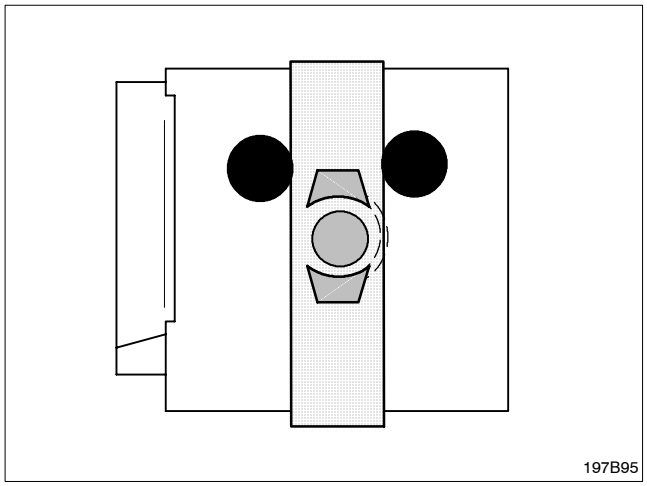
4.2.2. Checking the additional fields

The medium field remains covered up.

- Switch an exposure without cone.
  The Amplimat terminates the exposure.
- Cover the medium and additional fields vertically.
- Switch an exposure.
  The exposure is noticeably longer.

4.3. Checking the lateral fields

- Insert a large cassette.
- Cover the medium and additional fields vertically.
- Switch an exposure (full size).
  The Amplimat terminates the exposure.
- Break in the oesophagus diaphragm.
- Switch an exposure.
  The exposure is noticeably longer.

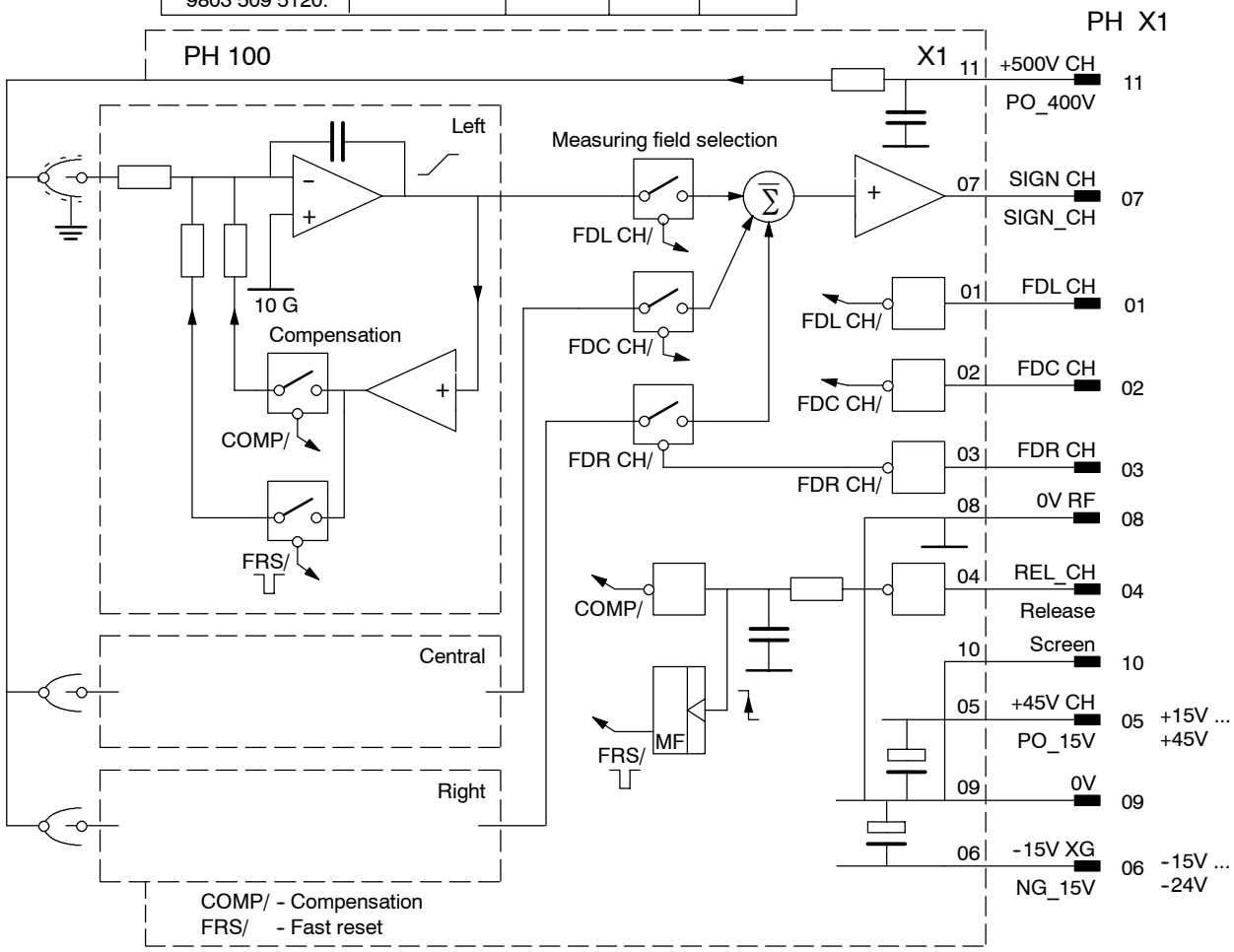


Measuring chamber	Field representation	Measuring field	Chamber plug PH X1	possible Colour of cable
Neuro DIAGNOST 9890 000 0167.		FDR CH FDC CH FDL CH	03 02 01	vi rd wt / blk
Cranio DIAGNOST 9890 000 0168.		FDR CH FDC CH FDL CH	03 02 01	vi rd wt / blk
Childrens BUCKY 9890 000 0162.		FDL CH FDC CH	01 02 insulate	wt / blk rd vi
SCOPOMAT 63/73/62/70 9890 000 0163.		FDR CH FDC CH FDL CH	03 02 01	vi rd wt / blk
SCOPOMAT 71/74 9890 000 0164.		FDC CH FDL CH	insulate 02 01	vi rd wt / blk
SCOPOMAT 42/52 9890 000 0165.		FDR CH FDL CH FDC CH	03 01 02	wt / blk rd vi
BUCKY 9890 000 0161.		FDL CH FDR CH FDC CH	01 03 02	wt / blk rd vi
BUCKY (Reverse) 9890 000 0161.		FDR CH FDL CH FDC CH	03 01 02	wt / blk rd vi
Chest cassette stand 9890 000 0166.		FDL CH FDR CH FDC CH	01 03 02	wt / blk rd vi
Extremities 9803 509 5020. Junior DIAGNOST 9803 509 5120.		FDL CH$^{\Delta}$	01	wt / blk

Interlink contacts A and H in the Amplimat connection plug

Exchange vi and wt/blk at MAXIMUS CM. SUPER CM and SUPER CP generators

$^{\Delta}$ no chamber selection but sensitivity selection



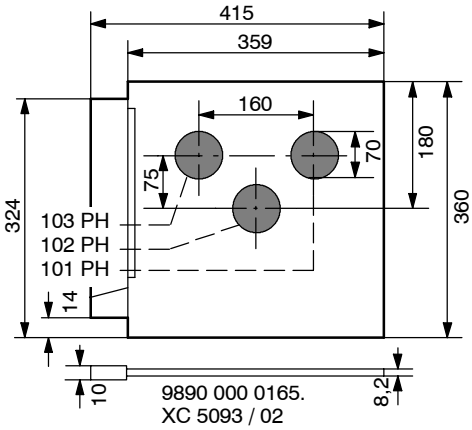
Ampl. measuring chamber

A4 03-05-13 Sie.

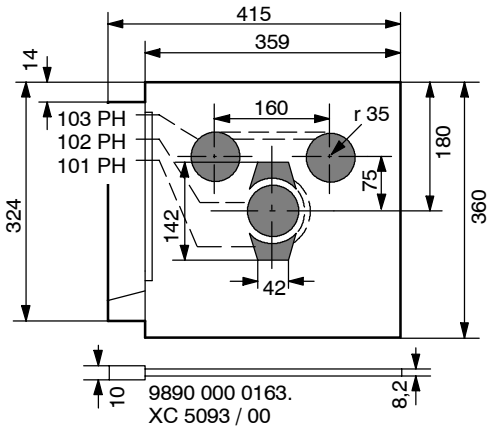
UNIT 9803 509 x0x02_Z1

Amplifier of 8 mm measuring chamber

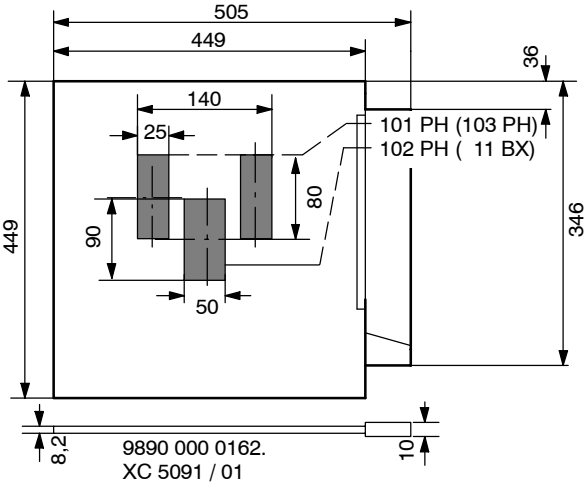
Circuit principle



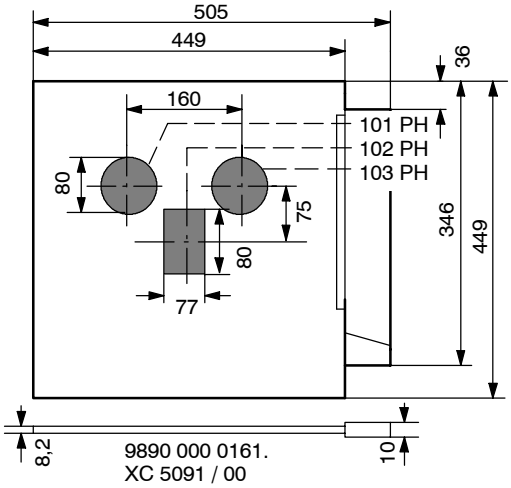
9890 000 0165.
XC 5093 / 02
SCOPOMAT 42/52
DIAGNOST OP-U



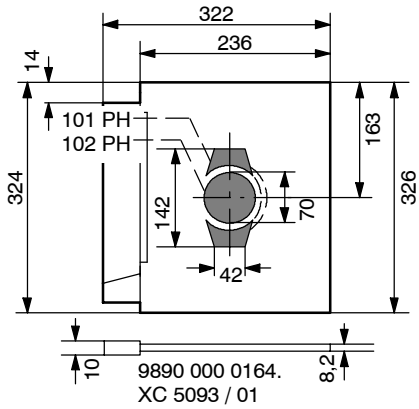
9890 000 0163.
XC 5093 / 00
SCOPOMAT 53/54/62/64/70/73



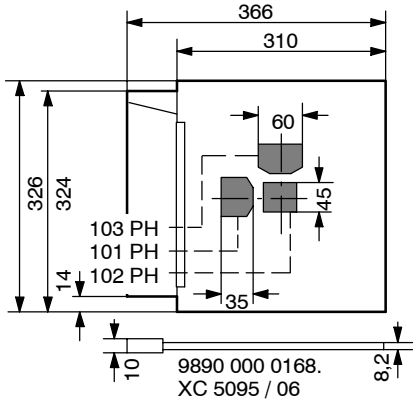
9890 000 0162.
XC 5091 / 01
Childrens BUCKY



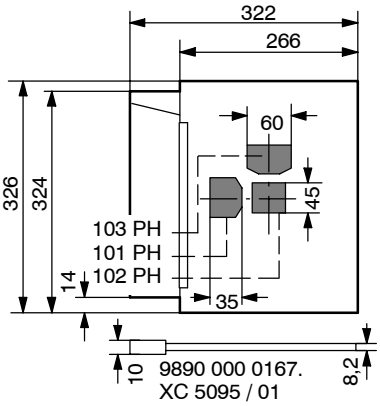
9890 000 0161.
XC 5091 / 00
BUCKY



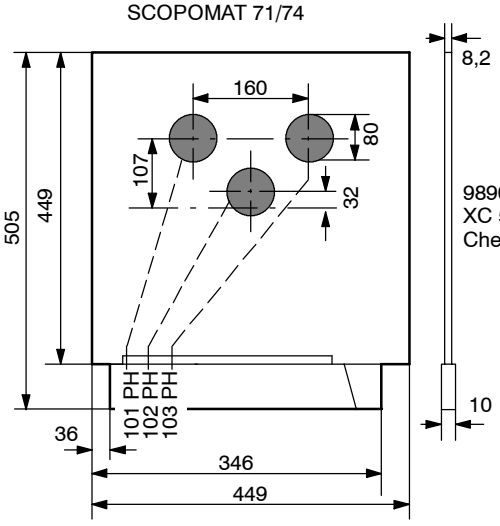
9890 000 0164.
XC 5093 / 01
SCOPOMAT 71/74



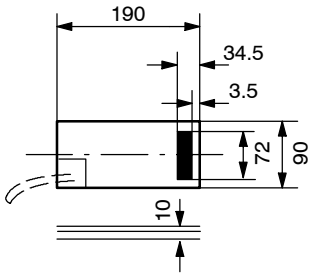
9890 000 0168.
XC 5095 / 06
Cranio-DIAGNOST



9890 000 0167.
XC 5095 / 01
Neuro-DIAGNOST



9890 000 0166.
XC 5095 / 00
Chest cassette stand

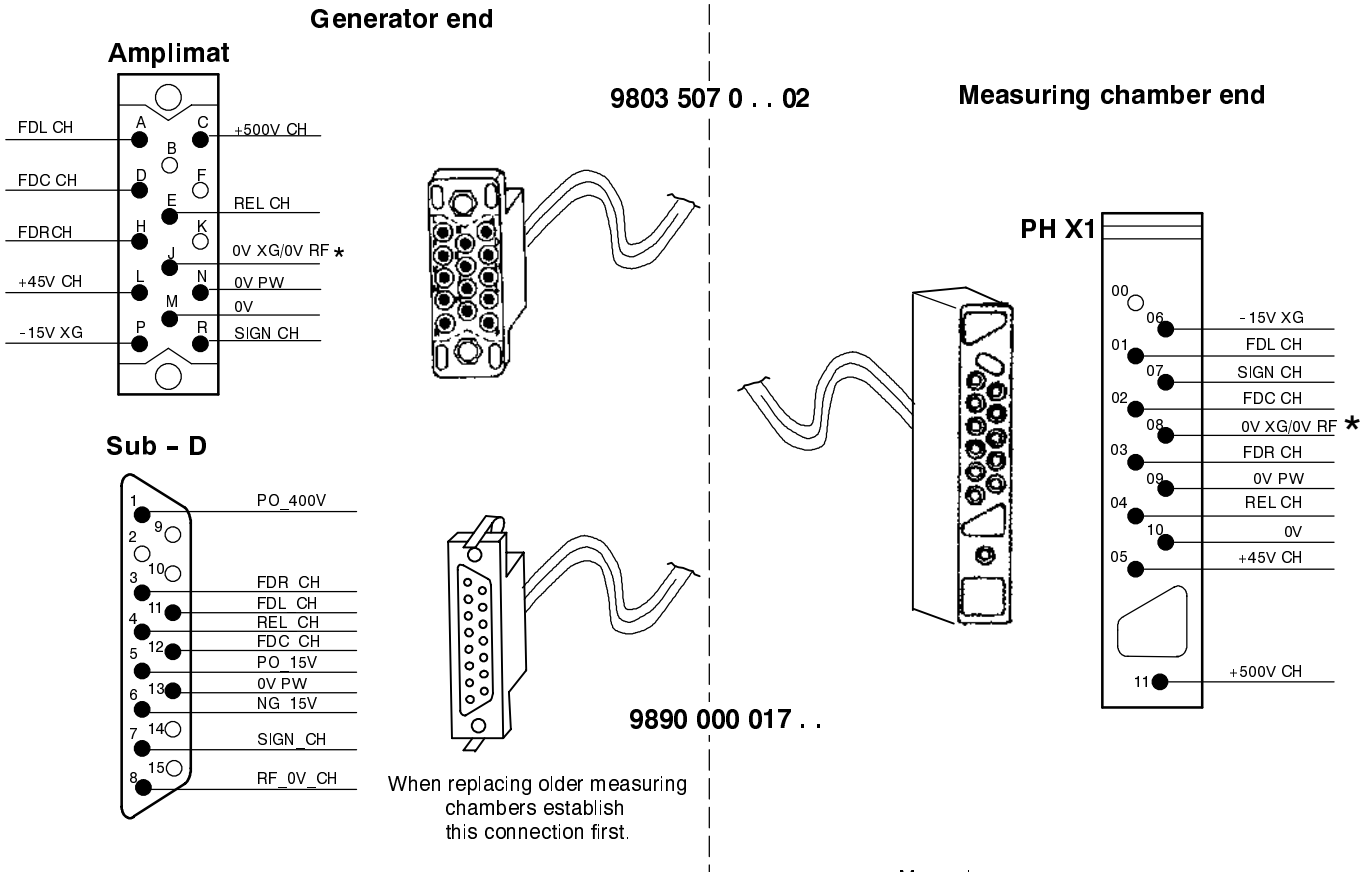


9803 509 5120. *
XC 5095 / 12
Junior Diagnost
9803 509 5020.
XC 5095 / 02
Extremities

* More sensitive measuring chamber

View represented=most sensitive position if this is the plane of incdence.
With the chamber installed inversely, the sensitivity is 18% lower.

Measuring chamber 8 mm



Ampl. measuring chamber

Generator		Function	Mnemonics used at generator		Measuring chamber	possible Colours of cables		
Ampl. 3+/14 pol.	Sub-D 15 pol.		MCM / SCM / Medio CP SCP / OMCP	Optimus	PH X1 3+/11 pol.			
E	4	Exposure command	REL CH	REL_CHn	04	br	br	gy
A	11	Meas. field left-hand	FDL CH	FD_L_CHn	01	wt | vi / bl	wt / blk | vi	blk
H	3	Meas. field right-hand	FDR CH	FD_R_CHn	03	vi / bl | wt	vi | wt / blk	vi
D	12	Central meas. field	FDC CH	FD_C_CHn	02	rd	rd	pk
C	1	Chamber voltage +500V/+400V	+500V CH	PO_400 V	11	bl	bl	bl
L	5	Amplif. operating voltage +45V/+15V	+45V CH	PO_15 V	05	trp	gy / blk	gn
R	7	Signal of chamber	SIGN CH	SIGN_CHn	07	blk	blk	br
J	8	0V for amplifier	0V XG / 0V RF *	RF_0V_CHn	08	or	or	wt
P	6	Amplif. operating voltage -24V/-15V	-15V XG	NG_15 V	06	wt / br	yw	yw
M	housing	Screening	0V		10	rd	gy	blank
N	13	0V power	0V PW	0V PW	09	pk	pk	rd
09 → N								

When replacing older measuring chambers establish this connection first since the wire served as a reserve wire which was not connected.

1) Pins 8 and 9 on PCB PH 100 connected.

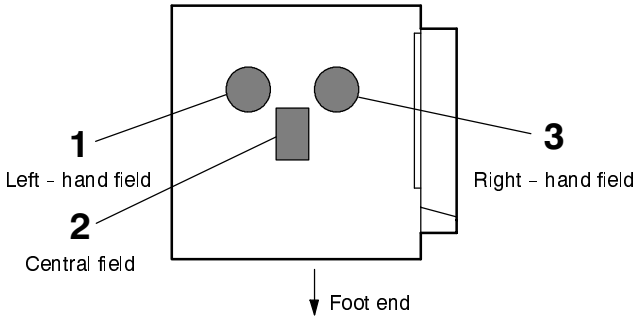
With over - table tube : look in the direction of radiation.

With serial changers and under - table tube : look towards the direction of radiation.

* SCP

( ) Colour code for earlier types of cables

bl = blue
blk = black
br = brown
gn = green
gy = grey
or = orange
pk = pink
rd = red
trp = transparent
vi = violet
wt = white
yw = yellow



Measuring chamber cable

A4 95-05-11 Sie.Re

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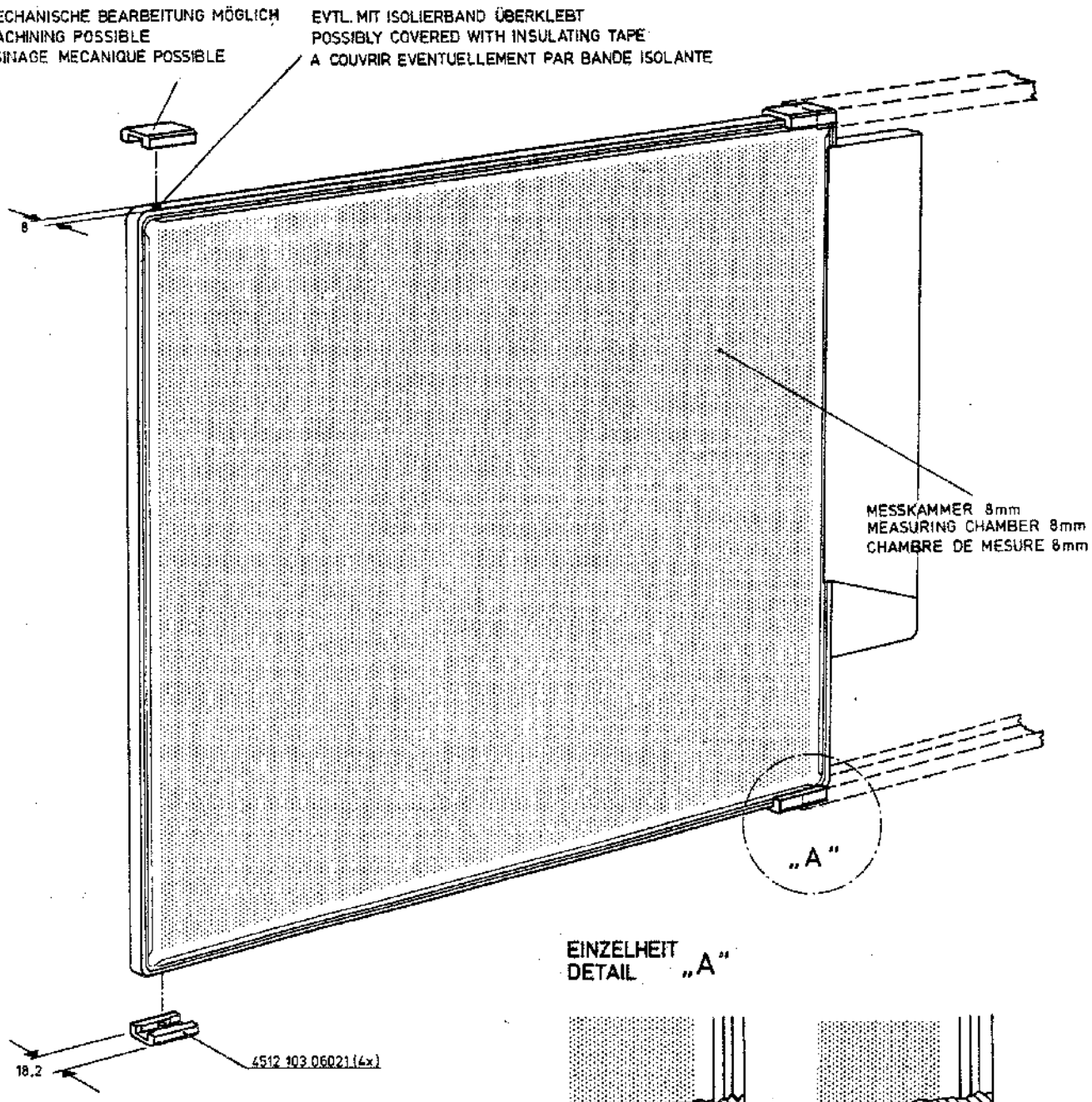
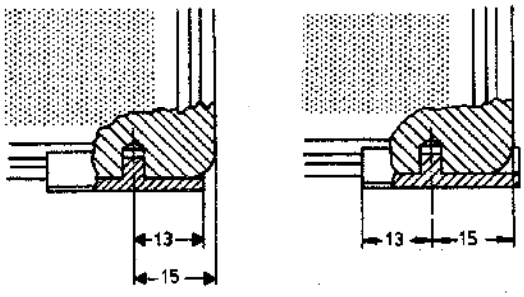


EINZELHEIT „A"
DETAIL „A"



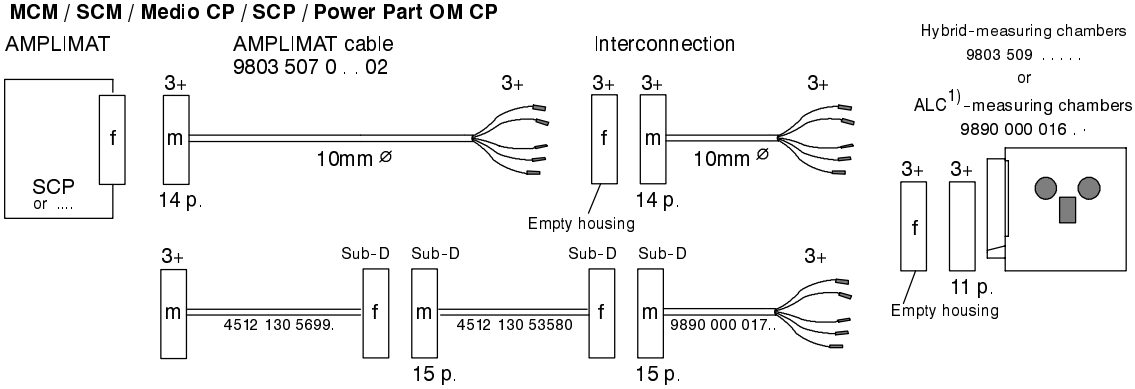
MEASURING CHAMBER WITH SPACERS
MESSKAMMER MIT DISTANZSTÜCKEN
CHAMBRE DE MESURE AVEC PIECES D'ECARTEMENT

INSTALLATION OF 8mm MEASURING CHAMBER IN 16mm FRAME
EINBAU VON 8mm MESSKAMMER IN 16mm RAHMEN
INSTALLATION D'UNE CHAMBRE 8mm DANS UN CADRE 16mm

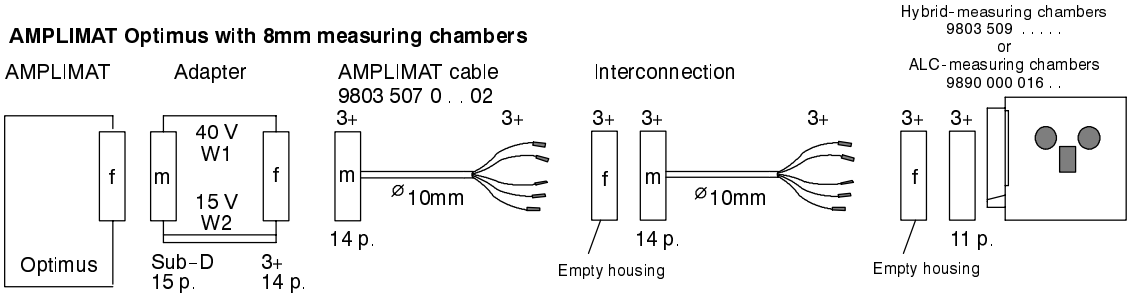
Connection versions AMPLIMAT-measuring chamber

interconnection only upon request.

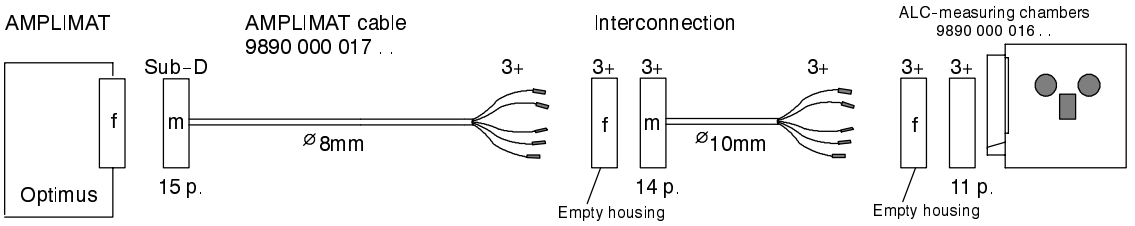
1. AMPLIMAT with 8mm measuring chambers to generators MCM / SCM / Medio CP / SCP / Power Part OM CP



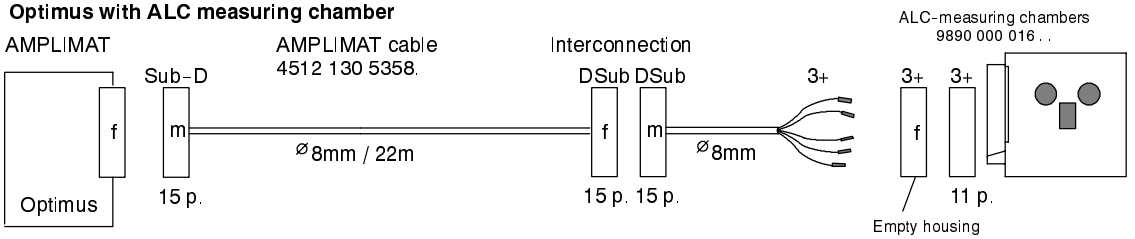
2. AMPLIMAT Optimus with 8mm measuring chambers



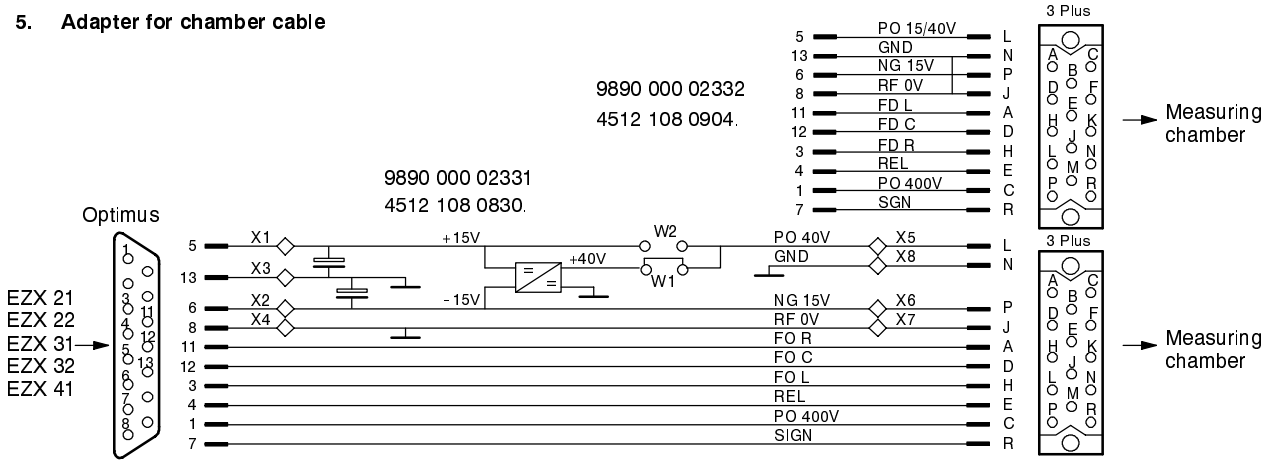
3. Optimus with ALC measuring chamber



4. Optimus with ALC measuring chamber



5. Adapter for chamber cable



Hybrid-measuring chamber: Supply voltage is 40V to 45V and -15V to -24V
ALC measuring chamber: Supply voltage is 15V to 45V and -15V to -24V

1) ALC : Automatic leakage compensation
2) f : female
3) m : male

Connection versions AMPLIMAT-measuring chamber

A4 96-08-23 Sie.Re
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